

AMENDMENTS TO THE SPECIFICATION

Page 9, paragraph 26, please amend as follows:

[0026] FIG 3D illustrates an alternate embodiment of the present invention, wherein three implants 900, 901 and 902 are implanted into a p-type substrate 915. The implants 900, 901 and 902, are placed in substrate 915 in a manner similar to that described in the embodiment of FIG. 3A-C, except that the implant angle for each of the implants (θ_1 , θ_2 , and θ_3) is reduced to a range of 0-5°, where at least one of the implants 901 and 902 has an implant angle greater than 0°. Once the implants have been set, a fourth light implant (PD 4) 920 910 is made in the region of the second 901 implant, on the side closest to the transfer gate. The fourth implant is inserted 913 at an increased angle θ_4 , wherein the implant angle θ_4 is measured away from a line normal to the surface of the substrate, as shown in FIG. 3D, and is preferably in the range of 10-30° of normal. Exemplary implant doses for the fourth implant may be in the range of $2 \times 10^{11}/\text{cm}^2$ - $5 \times 10^{12}/\text{cm}^2$. It is understood that the order of the implants (900, 901, 902 and 904 (if provided)) is not critical; each of the disclosed implants may be arranged in any order.

Page 12, paragraph 30, please amend as follows:

[0030] Region I, generally defined by the region above 131 and below regions 104 and floating diffusion 702, has the largest donor concentration between the range of just over $5 \times 10^{16}/\text{cm}^3$ to $5 \times 10^{17}/\text{cm}^3$. Region II, generally defined by the region between 126 and 131, has a lesser donor concentration between the ranges of just over $5 \times 10^{15}/\text{cm}^3$ to $5 \times 10^{16}/\text{cm}^3$. Region III, generally defined by the region between 121 and 126, has yet a smaller donor concentration between the ranges of just over $1 \times 10^{14}/\text{cm}^3$ to $5 \times 10^{15}/\text{cm}^3$. Region IV, generally defined by the region below 121, contains the lowest donor concentration at or below $1 \times 10^{14}/\text{cm}^3$. As can be seen in the electrostatic potential contour illustration, the reduction of the implant angle θ_3 from 30° to 15° from the previous

embodiment has resulted in a wider expansion of Region II from the previous embodiment, directly beneath ~~gat~~ gate 940, resulting in a further reduction in donor impurities underneath the transfer gate 940.

Page 13, paragraph 32, please amend as follows:

[0032] Region I, generally defined by the region above 132 and below regions 104 and floating diffusion 702, has the largest donor concentration between the range of just over $5E16 / \text{cm}^3$ to $5E17 / \text{cm}^3$. Region II, generally defined by the region between 127 and 132, has a lesser donor concentration between the ranges of just over $5E15 / \text{cm}^3$ to $5E16 / \text{cm}^3$. Region III, generally defined by the region between 122 and 127, has yet a smaller donor concentration between the ranges of just over $1E14 / \text{cm}^3$ to $5E15 / \text{cm}^3$. Region IV, generally defined by the region below 122, contains the lowest donor concentration at or below $1E14 / \text{cm}^3$. As can be seen in the electrostatic potential contour, the reduction of the implant angles θ_3 from 15° to 5° , and the increase of implant angle θ_2 from 5° to 30° from the previous embodiment has resulted in even a wider expansion of Region II from the previous embodiment, directly beneath ~~gat~~ gate 940, resulting in a further reduction in donor impurities underneath the transfer gate 940.